

IN THE CLAIMS:

1. (currently amended) A nonaqueous electrolyte secondary battery including a negative electrode containing a graphite material as the negative active material, a positive electrode containing lithium cobalt oxide as a main component of the positive active material and a nonaqueous electrolyte solution, said battery being characterized in that said lithium cobalt oxide contains 0.05 - 2.0 mol. % of a group IVA element and 0.1 - 2.0 mol. % of a group IIA element of the periodic table with respect to a total amount of the metal elements other than lithium and said nonaqueous electrolyte solution contains 0.2 - 1.5 % by weight of a sulfonyl-containing compound, and wherein said lithium cobalt oxide is obtained by mixing raw materials for preparing a lithium cobalt oxide with raw materials of said group IVA element and said group IIA element and heat treating the mixed raw materials.

2. (original) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that, in said positive active material, said group IVA element is zirconium and said group IIA element is magnesium.

3. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that said nonaqueous electrolyte solution further contains 0.5 - 4 % by weight of vinylene carbonate.

4. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that said sulfonyl-containing compound is at least one of 1,4-butanediol dimethanesulfonate and divinyl sulfone.

5. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that said nonaqueous electrolyte solution contains, as said sulfonyl-containing compound, 1,4-butanediol dimethanesulfonate in the amount of 0.5 - 1.5 % by weight.

6. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that said nonaqueous electrolyte solution contains, as said sulfonyl-containing compound, divinyl sulfone in the amount of 0.2 - 0.5 % by weight.

7. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that said nonaqueous electrolyte solution contains, as a solvent, diethyl carbonate.

8. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that said positive active material and negative active material are contained such that a ratio in charge capacity of the negative electrode to the positive electrode is 1.0 - 1.2 when an end-of-charge voltage is prescribed at 4.3 V.

9. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 1, characterized in that said positive active material and negative active material are contained such that a ratio in charge capacity of the negative electrode to the positive electrode is 1.0 - 1.2 when an end-of-charge voltage is prescribed at 4.4 V.

10. (canceled)

11. (previously presented) The nonaqueous electrolyte secondary battery as recited in claim 2, characterized in that said nonaqueous electrolyte solution further contains 0.5 - 4 % by weight of vinylene carbonate.

12. (new) A nonaqueous electrolyte secondary battery including a negative electrode containing a graphite material as the negative active material, a positive electrode containing lithium cobalt oxide as a main component of the positive active material and a nonaqueous electrolyte solution, said battery being characterized in that said lithium cobalt oxide contains a group IVA element and a group IIA element of the periodic table and said nonaqueous electrolyte solution contains 0.2 - 1.5 % by weight of divinyl sulfone and further contains vinylene carbonate.

13. (new) The nonaqueous electrolyte secondary battery as recited in claim 12, characterized in that the content of vinylene carbonate is 0.5 - 4 % by weight.

14. (new) The nonaqueous electrolyte secondary battery as recited in claim 12, characterized in that the content of divinyl sulfone is 0.2 - 0.5 % by weight.

15. (new) The nonaqueous electrolyte secondary battery as recited in claim 12, characterized in that said lithium cobalt oxide is obtained by mixing raw materials for preparing a lithium cobalt oxide with raw materials of said group IVA element and said group IIA element and heat treating the mixed raw materials.